DIGITAL VOICE SYSTEMS, INC.

The Speech Compression Specialists

AMBE-20x0™ HDK
Hardware Development Kit
(featuring the AMBE-2000™ Vocoder Chip!)

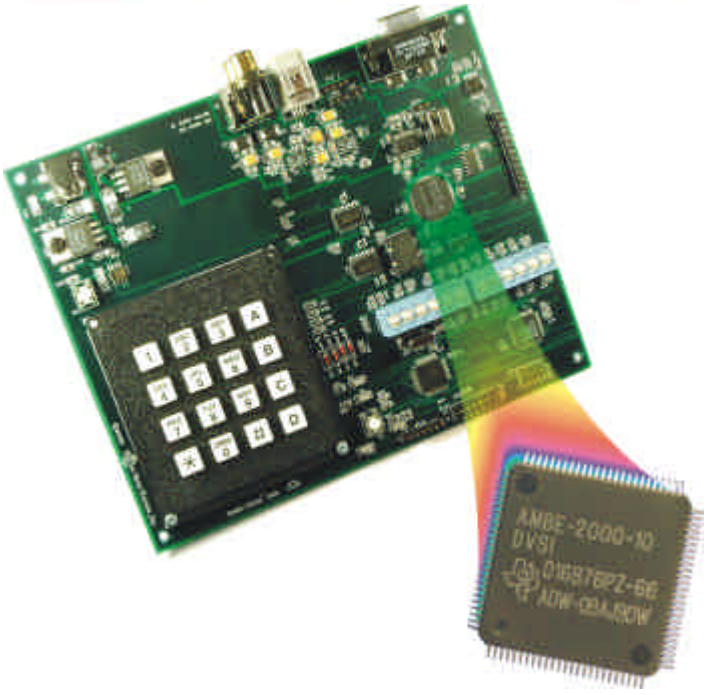
AMBE-20x0™ HDK Features

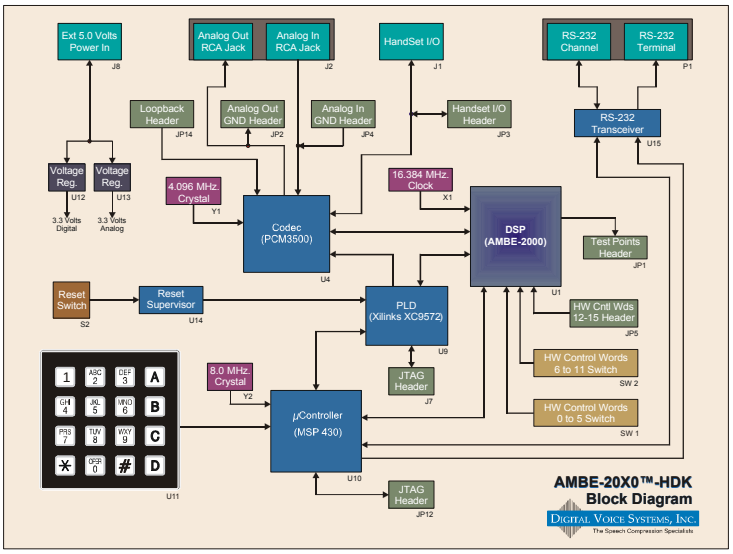
- Evaluation and test of AMBE® Vocoder Performance.
- Keypad, switches and jumpers provide simple configuration of vocoder data rate, FEC, and VAD.
- Equipped with a RS-232 interface for communication between two boards or to a PC.
- Detection, transmission and regeneration of DTMF / North American call progress tones.
- Complete reference design includes: sample control software and circuit details.

The Digital Voice Systems, Inc. (DVSI) AMBE-20x0™ HDK is a multipurpose vocoder development tool and reference design based on DVSI's AMBE-2000™ / AMBE-2020™ Vocoder Chips. The AMBE-20x0™ HDK is ideal for evaluation and test of vocoder performance and capabilities. The AMBE-20x0™ HDK provides a comprehensive, evaluation, test and development platform that helps product designers and manufacturing engineers gain experience with low-bit-rate vocoders. This valuable knowledge enables them to efficiently design and quickly produce high performance, narrowband communication equipment. This results in lower development costs and faster time to market.

The AMBE-20x0™ HDK employs DVSI's successful full-duplex AMBE-2000™ vocoder chip. This chip as well as the AMBE-2020™ (half-duplex version) are currently used in an endless array of digital communication systems around the globe. Both chips implement DVSI's patented AMBE® Voice Compression Technology to provide exceptional voice quality even at low data rates. These vocoder chips are an affordable and power efficient voice compression solution that support compression bit rates from 2000 to 9600 bps.

Both chips include Forward Error Correction (FEC) to optimize robustness to background noise and channel bit errors. This level of performance has resulted in the successful deployment of wireless communication systems in the most demanding environments. Also, the AMBE-2000™ and the AMBE-2020™ vocoder chips include a number of advanced features such as: Voice Activity Detection (VAD), adaptive Comfort Noise Insertion (CNI) and support for DTMF tones.





The AMBE-20x0™ HDK is able to demonstrate the capabilities and benefits of the AMBE-2000™ / AMBE-2020™ low-bit-rate vocoder in real-time, without investing in engineering design and hardware development. Two AMBE-20x0™ HDK vocoder boards may be connected together to easily establish a full-duplex (encoding and decoding) low bandwidth voice compression communication system.

The AMBE-20x0™ HDK is more than a low data rate voice compression tool. The AMBE- 20x0™ HDK is also a stand-alone voice processing board, equipped with connections for analog audio I/O, an RS-232 serial UART port communication channel interface, and an RS-232 console output port. Connecting the HDK to a PC, engineers can configure the channel interface, record an analog input to a compressed data file, and decode previously encoded files.

The AMBE-20x0™ HDK vocoder board is designed with industry standard connections for fast and easy setup and evaluation. Analog voice may be input to the handset or RCA jack connection to provide of encoding real-time speech. The RS-232 connector acts as the channel for the compressed data bit stream (between 2.4 and 9.6 kbps based on user defined setting). It has the ability to playback (decode) stored compressed voice files from a PC.

Additionally, the board provides test points for extensive circuit probing and monitoring of data. An on-board keypad and slide switches provide control of configuration parameters for maximum flexibility of vocoder features. All these capabilities are ideal for comparing voice quality at various rates, analyzing the compressed voice data I/O stream and establishing interface requirements. This gives engineers the insight required to efficiently prototype their own low-bit-rate communication systems.

The AMBE-20x0™ HDK is a complete hardware and software package solution, with off-the-shelf availability. The development kit includes the evaluation board, schematic details, software routines for the on-board Microcontroller and Programmable Logic Device, as well as reference circuit designs. The AMBE-20x0™ HDK provides a cost-effective vehicle that reduces the time and up-front engineering expenses associated with new product development. Once a new product design is complete and manufacturing begins the AMBE-20x0™ HDK can then be used to simulate actual system conditions as a calibrated quality control reference standard.

The value of DVSI's AMBE® Voice Compression Technology goes beyond low bit rate and voice quality. It has been thoroughly evaluated and tested by international manufacturers under various conditions using a variety of languages. This assures the user is getting the best vocoder available, making the DVSI vocoder the logical choice without the need for additional comparison tests. Additionally, DVSI's Voice Compression technology has been implemented worldwide for more than 15 years. This field proven technology offers a security that can play a key role in making any communication system an overall success.

DVSI's dedicated staff combine years of experience in vocoder technology, with expertise in Digital Signal Processing, computer software generation and hardware development. For more information regarding our high-performance voice compression solutions, contact DVSI today.

Technical Specifications

Analog Connections:	
Line-In	3.5 mm Phono Audio Jack
Line-Out	3.5 mm Phono Audio Jack
Handset	RJ-14 Full Duplex Communication
Digital Connections:	
Channel Data	DB-9S RS-232 Serial Port
PC Connection	DB-9S RS-232 Serial Port
Power:	
Input Requirements	5 V DC @ 120 ma
Physical:	
Size	6.75" x 5.5"
Weight	4.5 oz.

(Specifications subject to change.)

Digital Voice Systems, Inc.
The Speech Compression Specialists

234 Littleton Road
Westford, MA 01886
Tel: (978) 392-0002
Fax: (978) 392-8866
email: info@dvsinc.com
Web Site: www.dvsinc.com